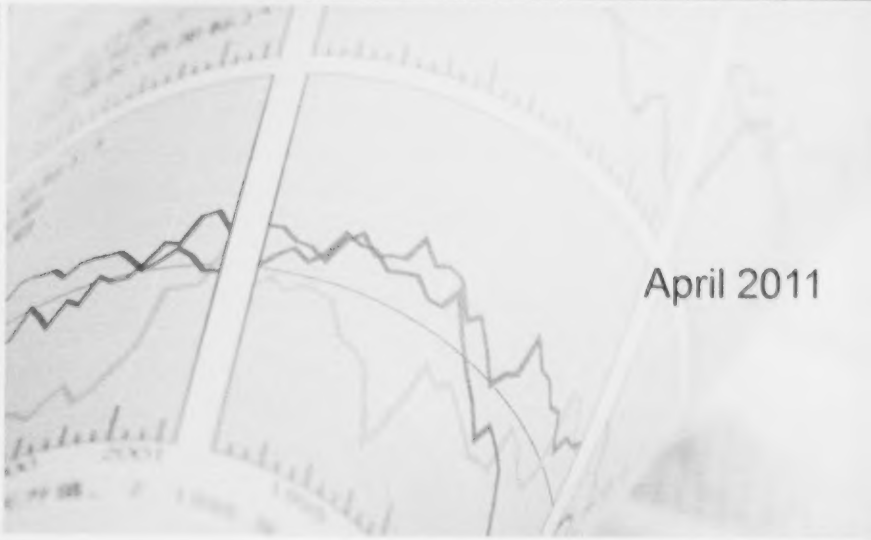


April 2011

Alberta's International Merchandise Exports

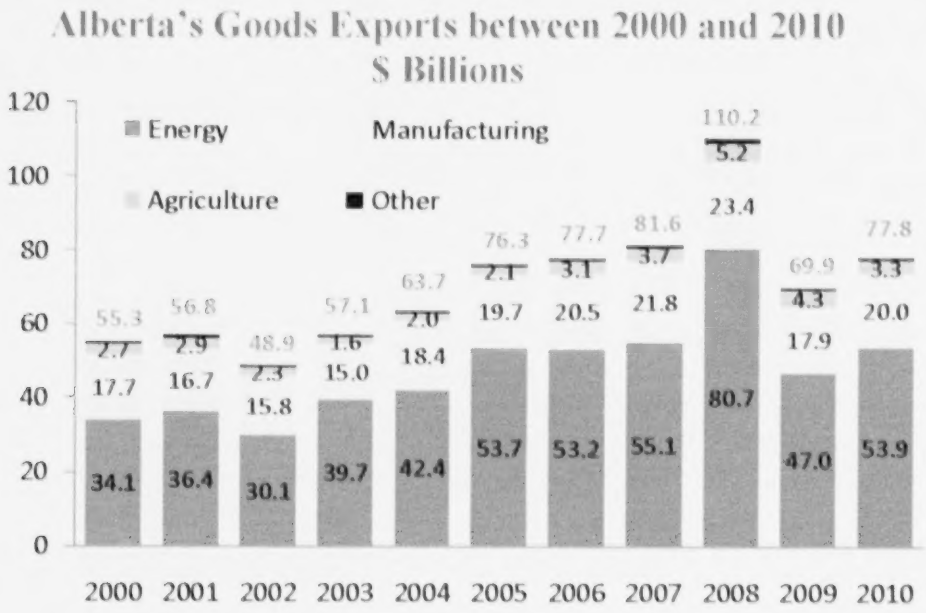
A 10 Year Review

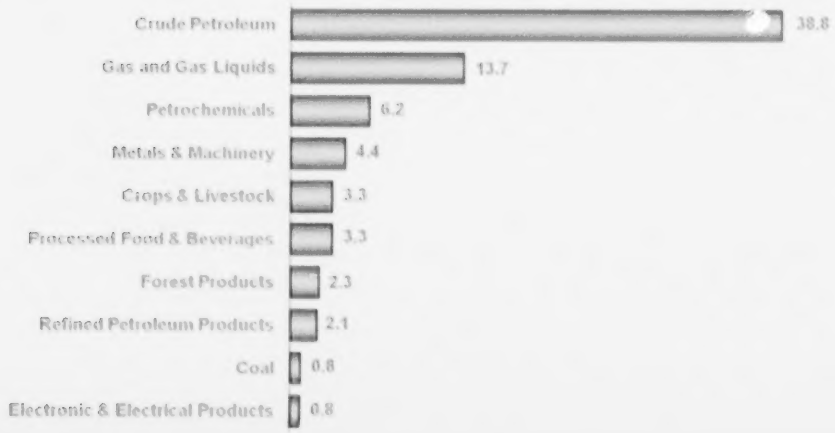
Government of Alberta

Alberta's International Merchandise Exports – A 10-Year Review

Overview

Although the value of Alberta's goods exports fell sharply by 37% between 2008 and 2009 as a result of the global recession, 2010's value of $77.8 billion was still 41% higher than the $55.3 billion in exports of 2000. Most of the growth over the 10-year period was the result of a 58% jump in energy exports, as both prices and volumes of crude oil grew strongly over that period. In fact, all of the $22.5 billion increase in the value of total goods exports from 2000 to 2010 was accounted for by the $24 billion increase for crude oil. While natural gas was the largest export commodity during the first half of the period, its exports have fallen sharply since 2005. Manufacturing and agricultural exports grew by 13% and 23%, respectively, between 2000 and 2010.





Energy and Mining

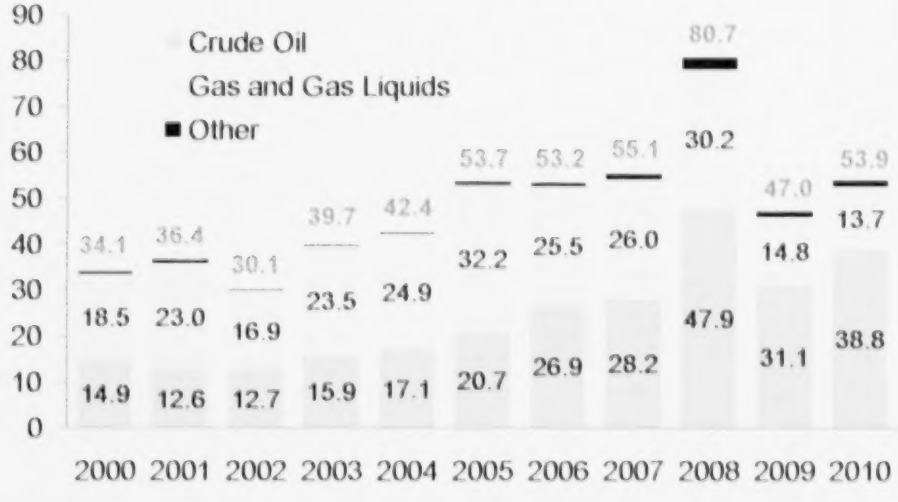
Energy commodities account for the largest share of Alberta exports – energy's share ranged from a low of 61.5% in 2000 (when energy prices were relatively low) to a high of 73.2% in 2008 (when they were high). In 2010, energy exports totaled $53.9 billion, a 14.6% increase over the previous year, but one-third less than the record value of $80.7 billion reached in 2008.

Between 2000 and 2010, the value of crude oil exports rose 161% to $38.8 billion. Oil volumes increased 36% over that period, with most of the volume growth coming after 2005 when oil sands output rose strongly. Oil export volumes even continued to increase during the recent recession. Oil prices peaked in 2008, but still nearly doubled between 2000 and 2010. Crude oil has been Alberta's largest export commodity since 2006.

Prior to 2006, natural gas and gas liquids[1] were Alberta's top export commodity as a result of rising prices and volumes. However, after 2005 gas volumes have fallen by 15% as Alberta is running out of conventional gas reserves, while gas prices have fallen by one-half because of the US' huge shale gas reserves. Between 2000 and 2010, the value of gas and gas liquids exports declined by 26% to $13.4 billion. Natural gas volumes fell by 11% during that period and gas liquids by 45%, while gas prices were 16% lower in 2010 than in 2000.

Other energy and mining exports include sulphur and coal. The value of sulphur exports fluctuates wildly depending on market conditions, for instance prices rose 350% between 2007 and 2008 and then declined by 80% the following year. Sulphur exports were $452 million in 2010, a 77% increase from 2000, but well below 2008's peak of $1.9 billion. The value of coal exports continued to rise during the recession as a result of rising international bituminous coal prices and reached a record level of $833 million in 2010, a 120% increase from 2000. However, export volumes of both coal and sulphur were lower in 2010 than in 2000.

Alberta's Energy and Mining Exports between 2000 and 2010 ($ Billions)



[1] Gas liquids include propane, butanes and other liquefied petroleum gases

The main destination of Alberta energy and mining commodities is the US, which accounted for 98% of exports in 2010, as virtually all oil and gas is shipped to the US. Nevertheless, exports to other destinations totaled over $1 billion in 2010, as exports of coal and sulphur are destined primarily to non-US markets, such as China, Japan and South Korea.

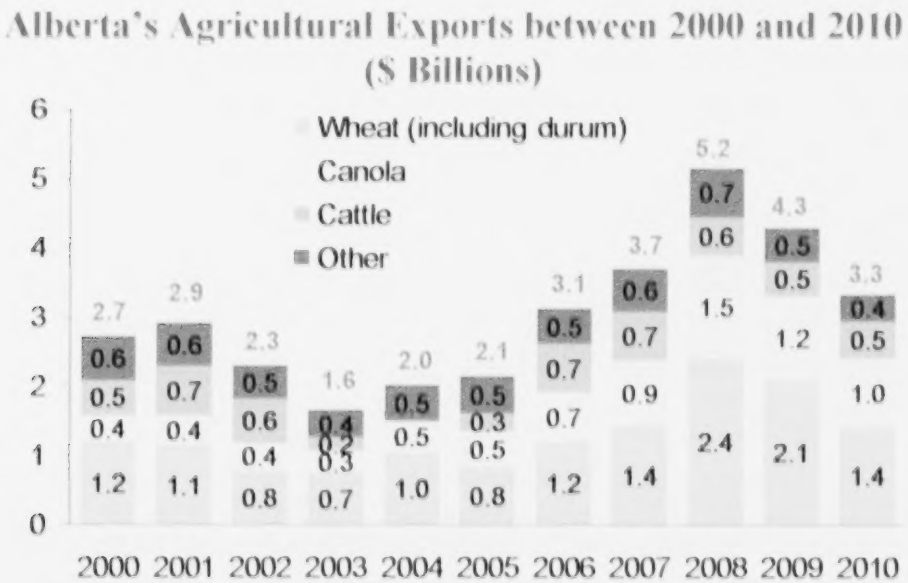
Primary Agriculture

Exports of unprocessed agricultural products rose 23% between 2000 and 2010 to $3.3 billion, as a result of higher crop prices and a large jump in canola volumes. Export values nearly doubled between 2000 and 2008, but have fallen sharply by 35% since then as both prices and volumes declined. Crops account for about three quarters of primary agricultural exports and live animals for one quarter. Wheat is Alberta's largest agricultural export commodity, followed by canola, live cattle and durum wheat.

The main destination of Alberta agricultural products is the US, which accounted for 28% of exports in 2010 down from 34% in 2000. Other large customers include Japan (14% in 2010), Mexico (8%), China (8%), Bangladesh (4%), United Arab Emirates (4%), Pakistan (3%) and Sri Lanka (3%). While 98% of livestock exports are destined for the US, the US share of crop exports was only 12% in 2010, as Japan is traditionally Alberta's largest market for crops.

Crop exports rose 60% between 2000 and 2010 to $2.7 billion. The value of crop exports is heavily influenced by local weather conditions (such as the unusually large number of drought years since 2000) and global prices (influenced by rising demand from emerging markets and for bio-fuels). Exports of wheat (excluding durum) rose 27% over that period to $1.3 billion on higher prices, while canola exports rose 153% to $1 billion as volumes rose 66% and prices 52%. Other crops, such as durum wheat ($119 million in 2010), peas, barley and hay, had declines in export values on lower volumes.

The value of livestock exports was highly volatile over the past decade, influenced by diseases (BSE) and recently introduced mandatory Country of Origin Labeling regulations in the U.S. Livestock exports fell by 3% over the same period to $643 million in 2010. Live cattle exports reached $535 million in 2010, up 4% since 2000 on higher volumes, but the number of hogs exported tumbled by more than 70%.

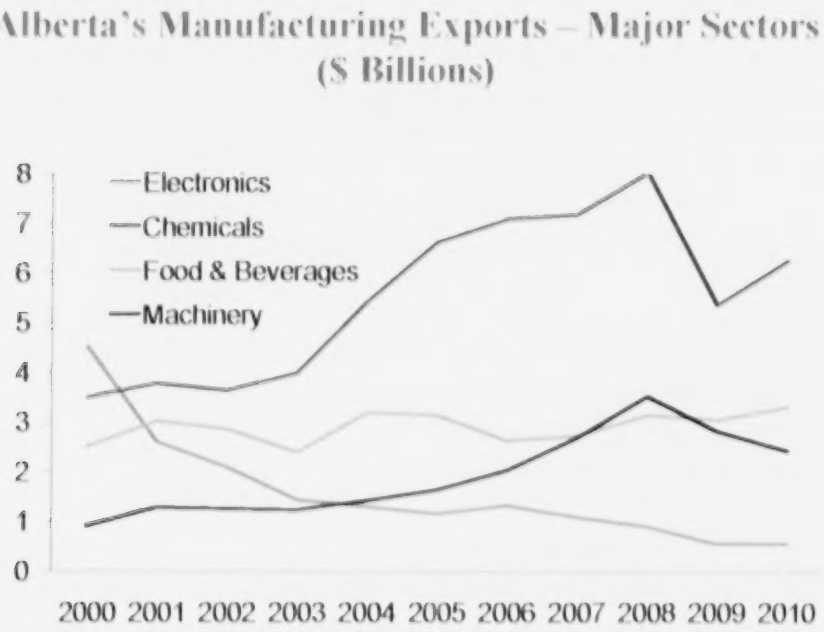


Manufacturing

Exports of manufactured goods grew strongly by 32% between 2000 and 2008. However, in 2009 the value of these exports fell by 24%, due to the global recession which reduced both export volumes and commodity prices, back to a level only marginally higher than the 2000 value. Manufacturing exports rebounded by 12% in 2010 to $20 billion and exceeded the 2000 level by 13%.

The mix of manufacturing exports has changed dramatically over that period. In 2000, computers and electronics was Alberta's largest export manufacturing sector with $4.5 billion in exports, most of it telecommunication equipment. However, this sector has fallen on hard times and exports have declined steadily. By 2010 the export value had fallen by 88%, compared to the 2000 value, and this sector was trailing seven other sectors in 2010.

Starting in 2001, chemicals became the top manufacturing sector on an exports basis and retained that position throughout the remainder of the period, even though the export value tumbled by one-third between 2008 and 2009. Between 2005 and 2010 the chemicals sector accounted for roughly one-third of total manufacturing exports.



Chemicals

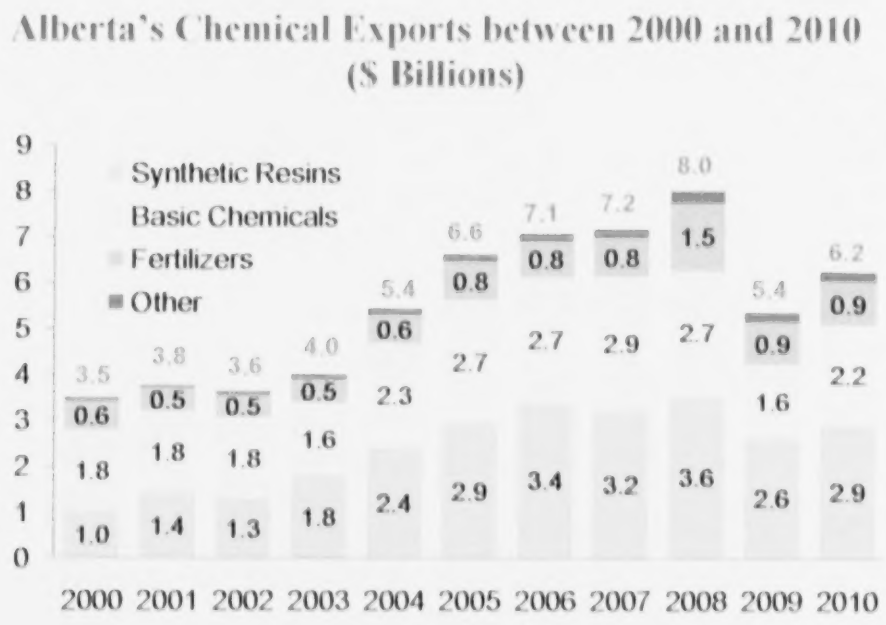
Exports of chemicals more than doubled between 2000 and 2008 to $8 billion. In 2009, the value of chemical exports fell by one-third (due to the global recession which reduced export volumes and especially commodity prices) back to a level that was slightly lower than the 2004 value. Chemical exports rebounded by 16.5% in 2010 to $6.2 billion and exceeded the 2000 level by 79%. It is estimated that about two-thirds of the 10-year increase in value was the result of higher volumes and that higher prices account for one third of the increase.

The largest sub-sector is synthetic resins, such as polyethylene, that accounted for about 45% of chemical exports, followed by basic chemicals (petro-chemicals) with a one-third share, and fertilizers with a 15% share.
Exports of synthetic resins nearly tripled over the 10-year period to $2.9 billion as volumes more than doubled. Export volumes tripled between 2000 and 2007, but have been on a steady decline since then due to a shortage of ethane feedstock. The largest commodities in 2010 were polyethylene ($900 million), ethylene-vinyl acetate copolymers ($160 million) and other ethylene polymers ($1.4 billion).

Exports of basic chemicals rose 23% between 2000 and 2010 to $2.2 billion, with equal contributions by prices and volumes to this increase. These exports rose 65% between 2000 and 2007, but then lost nearly half their value between 2007 and 2009. The largest commodities in 2010 were ethylene glycol ($1.1 billion), styrene ($390 million) and acyclic hydrocarbons ($340 million). Methanol and acyclic ethers were also major exports over the first half of the period, peaking at $460 million in 2001, but are now no longer exported.

Exports of fertilizers rose 63% over the 10-year period to $940 million, as a result of higher prices. The largest commodities in 2010 were urea ($435 million) and anhydrous ammonia ($355 million).

The main destination of Alberta chemicals is the US, which accounted for 81% of exports in 2010, down from a 74% share in 2000. Other large customers include China (9% in 2010) and Mexico (3%).



Food and Beverages

Exports of food and beverages rose 31% between 2000 and 2010 as a result of higher volumes. This sector's exports were little affected by the global recession and in 2009 the value of food and beverage exports fell by only 3%. In 2010, exports rose 8.5% to a record $3.3 billion.

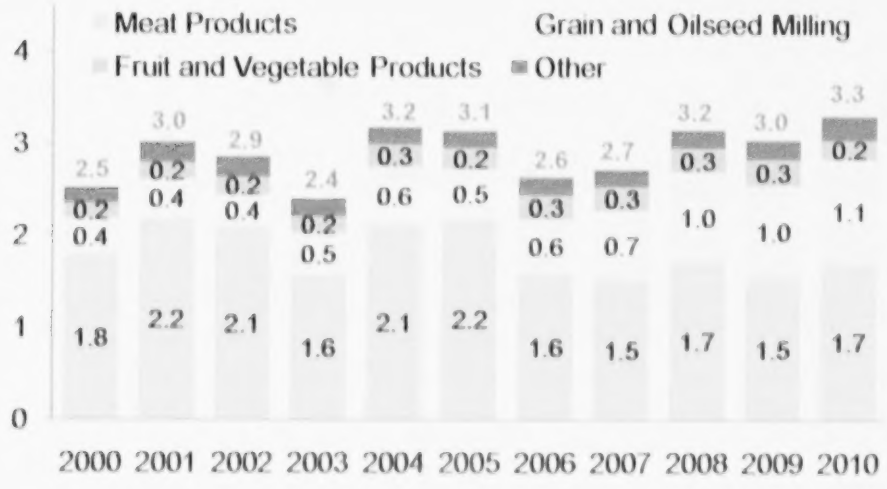
The largest sub-sector is meat products, which accounted for $1.7 billion or just over one-half of food and beverage exports in 2010, down from a 73% share in 2002. Beef exports totaled about $1.1 billion

in 2010, 25% below their 2000 value as a result of lower prices. Pork exports more than doubled during that period to $400 million due to higher volumes.

The grain and oilseed milling sub-sector exported $1.1 billion in 2010, a 179% increase from 2000, as both volumes and prices rose strongly. Canola oil exports rose from $130 million in 2000 to $755 million in 2010. Canola oil-cake and meal reached $160 million in 2010 and malt $140 million.

The main destination of Alberta food and beverages is the US, which accounted for 43% of exports in 2010, down from a 70% share in 2000. The large decline in the US share can be explained by China's emergence as a major customer: while in 2000 China accounted for just over 1% of food and beverage exports, by 2010 its share had grown to 23%. Other large customers include Japan (11% in 2010) and Mexico (6%).

Alberta's Food and Beverage Exports between 2000 and 2010 ($ Billions)



Machinery

Exports of machinery nearly quadrupled between 2000 and 2008, as a result of surging demand for oil and gas field machinery and parts. However, the global recession and concurrent decline in drilling activity caused these exports to decline by 31% between 2008 and 2010 to $2.4 billion.

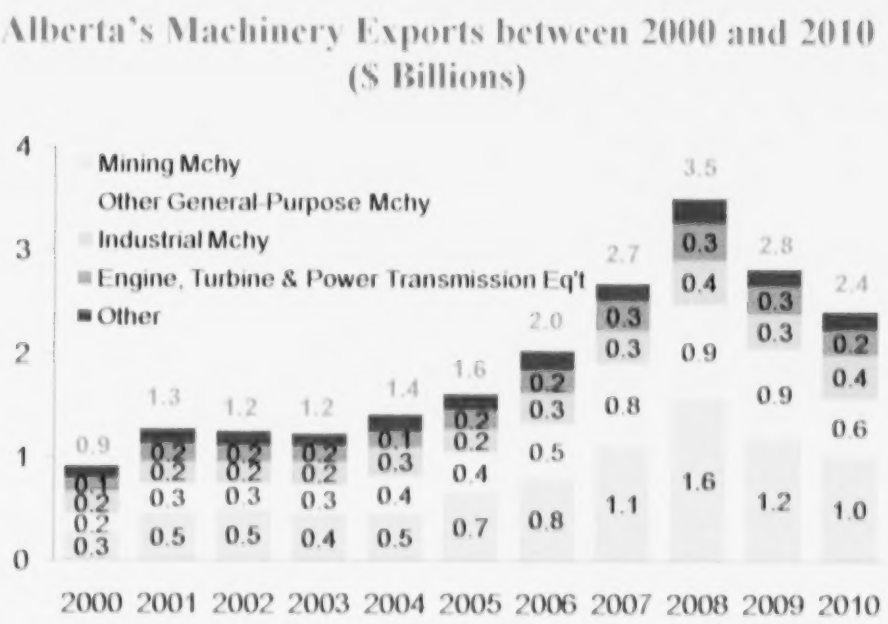
The largest sub-sector is agricultural, construction and mining machinery, which is dominated by oil and gas related machinery in Alberta. It accounted for $1 billion or 42% of machinery exports in 2010, up from $270 million or a 30% share in 2000. The largest export commodity group is oil and gas field boring and sinking machinery (including parts) with a value of $720 million in 2010, up from $115 million in 2000. Other large export commodities include lifting, handling, loading or unloading machinery (e.g. well servicing rigs or derricks - $100 million in 2010) and parts for derricks and cranes ($65 million).

The second largest sub-sector is other general-purpose machinery with $570 million in exports in 2010, more than three times the 2000 value. Oil well and oil field pumps and parts for pumps are the largest

commodity group with $310 million in exports in 2010, followed by air and gas compressors ($70 million) and pulleys and tackles ($60 million).

Exports of industrial machinery totaled $415 million in 2010. The largest commodity group is machines and mechanical appliances with individual functions, mainly oil and gas field wireline and downhole equipment, with $255 million in exports in 2010. This category also includes machinery used by manufacturers, such as distilling and rectifying plant ($98 million in 2010) used in the chemicals sector.

The main destination of Alberta machinery is the US, which accounted for 59% of exports in 2010, down from a 65% share in 2000. Other large customers include Russia (7% in 2010), South Korea and Australia (4% each). Mexico was also a major customer in 2008 and 2009, with a 5% to 10% share, but this share fell to 1% in 2010.



Petroleum and Coal Products

Exports of refinery products rose 165% between 2000 and 2010 to a record $2.1 billion. Most of the increase was the result of higher prices, although volumes have also increased, especially during the past few years. The global recession and concurrent decline in refined petroleum prices caused these exports to decline by 11% between 2008 and 2009, even though export volumes continued to rise. In 2010, the export value rose 68% on higher export prices and volumes of diesel fuel, aviation turbine fuel and residual/bunker fuel oils.

The main destination of Alberta refinery products is the US, which accounted for 93% of exports in 2010, followed by Japan and the Netherlands (2% each) and China (1%). The US share has been declining steadily over the 2000 – 2010 period from 99.8% in 2000 to 93.5% in 2010.

The largest export commodity group is petroleum oils and oils obtained from bituminous minerals, such as motor gasoline, diesel fuel and other fuel oils, with a value of $1.5 billion in 2010, up from $657 million in 2000. Other large export commodities include:

- Liquefied propylene, butylene and butadiene - $405 million in 2010
- Petroleum bitumen (not raw bitumen but the refined product primarily used for asphalt) - $145 million in 2010
- Petroleum coke - $85 million

Primary Metals

Exports of primary metals more than tripled between 2000 and 2010 to $1.4 billion. After rising from $437 million in 2000 to $2.3 billion in 2007, exports of primary metals (such as nickel and steel pipes) declined by more than one-half between 2007 and 2009 to $1.1 billion. The export decline came to an end in 2010: exports increased by 26% from 2009 to $1.4 billion.

The top two destinations of Alberta primary metals are the US and the Netherlands, each of which accounted for 25% of exports in 2010. Other major markets include by China (19%), Japan (9%), Taiwan (5%), Belgium (4%) and Italy (3%). Exports to the US and the Netherlands more than tripled over the 2000 to 2010 period, but exports to Italy, the number two destination in 2000, fell by more than one-half. Exports to China surged over that period, from $12 million in 2000 to $264 million in 2010.

The largest export commodity group is nickel products, with a value of $791 million in 2010, up from $263 million in 2000. During that time period, export volumes rose from about 19 million kilograms in 2000 to 38 million in 2010, and prices nearly doubled (but fell sharply between 2007 and 2009). Other large export commodities include:

- Cobalt - $197 million in 2010
- Iron/steel casing and tubing used in drilling for oil or gas - $149 million
- Bars and rods of steel - $84 million
- Line pipe for oil or gas pipelines - <$1 million in 2010, over $100 million in previous five years

Fabricated Metals

Exports of fabricated metals nearly doubled between 2000 and 2010 to $577 million. After rising from $323 million in 2000 to $795 million in 2007, exports of fabricated metals (primarily iron and steel products, such as taps, cocks and valves, for oil and gas fields) declined by 27% between 2007 and 2010 to $577 million.

The main destination of Alberta fabricated metals is the US, which accounted for 65% of exports in 2010, down from a 78% share in 2000. Other markets include Australia (3%) and the United Kingdom and China (2% each).

The largest export commodity group is taps, cocks, valves and similar appliances (including parts), with a value of $205 million in 2010, up from $73 million in 2000. Other large export commodities include:

- Springs and leaves for springs, of iron or steel - $43 million
- Structures and parts of structures, of iron or steel - $36 million

Paper Products and Wood Pulp

Exports of pulp and paper declined by 17% between 2000 and 2010 to $1.6 billion. This decline is the result of the very high pulp prices in 2000, pulp volumes were higher in 2010 than in 2000 and newsprint volumes reached a record high in 2010. After dropping by 18% in 2009 because of the global recession, pulp and paper exports rose 21% between 2009 and 2010 as pulp prices strengthened.

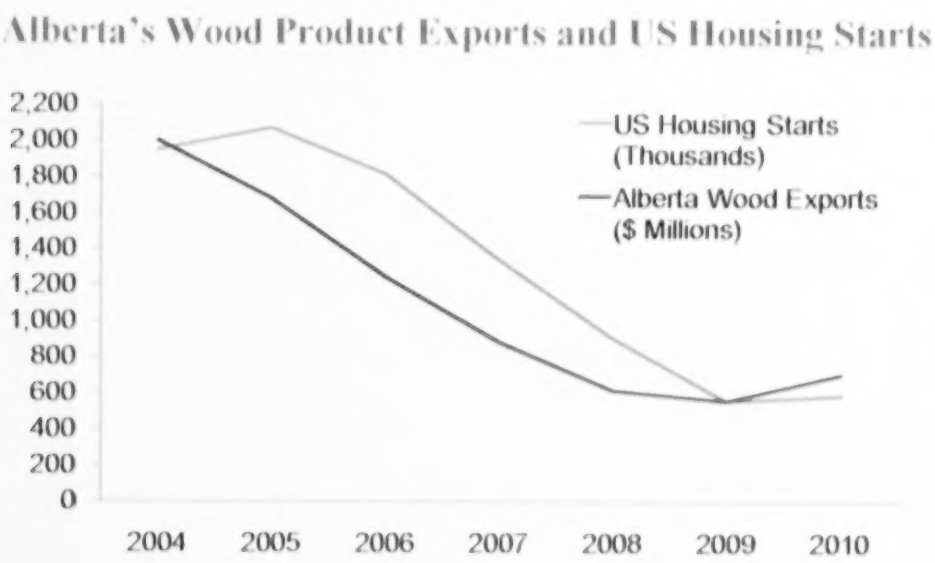
The main destination of Alberta pulp and paper is the US, which accounted for 56% of exports in 2010, followed by China (15%), Japan (10%) and South Korea (8%). Exports to the US have been fairly stable over the 2000 – 2010 period, exports to Japan and South Korea fell by nearly one-half, exports to China more than quintupled.

The largest export commodity group is wood pulp, with a value of $1.4 billion in 2010, down from $1.7 billion in 2000. During that time period, export volumes rose from about 1.5 million air dried tonnes in 2000 to 1.7 million tonnes in 2010, and prices fell by about 20%. Other large export commodities include:

- Newsprint - $123 million in 2010
- Paper and paperboard - $30 million in 2010
- Cartons and boxes - $13 million

Wood Products

After increasing by more than one-half between 2000 and 2004, exports of wood products (such as lumber and oriented strand board) declined by 75% between 2004 and 2009 to $555 million, because of a similar decline in US housing starts over the same period. The export decline came to an end in 2010: exports increased by 27% from 2009 to $707 million.



The main destination of Alberta wood products is the US, which accounted for 86% of exports in 2010, followed by Japan (10%).

The largest sub-sector is sawmills and wood preservation, with a value of $404 million in 2010, down from $718 million in 2000. Its exports peaked at $770 million in 2004. Lumber volumes rose by one-third between 2000 and 2004, but have fallen by one-third since 2004. Between 2000 and 2009, lumber prices fell by one-half, but rose 23% in 2010.

Exports of the veneer, plywood and engineered wood products sub-sector have been even more volatile, rising from $511 million in 2000 to $1.1 billion in 2004 and then tumbling to $145 million by 2008. These exports have risen somewhat since then to just under $200 million in 2010. Both prices and volumes of oriented strand board declined sharply between 2000 and 2010.

The sector's largest export commodities include:

- Lumber - $382 million in 2010
- Oriented strand board - $154 million in 2010
- Prefabricated buildings - $63 million
- Fibreboard - $22 million

Computer and Electronic Products

Prior to 2006, communications equipment dominated Alberta's computer and electronics exports mainly because of the presence of NorTel in the province. However, this sector's exports have declined sharply, both because of the tech bust of 2000 and NorTel's pulling out of the province. Exports of computer and electronics peaked in 2000 at $4.5 billion, making it manufacturing's largest sector on an export basis in that year. Exports have declined steadily since 2000 to reach a low of $549 million in 2010.

The main destination of Alberta's electronics is the US, which accounted for 55% of exports in 2010, down from a 91% share in 2000. Other markets include China (6%), the United Kingdom (4%) and Switzerland (3%).

Back in 2000, almost all exports were of telecommunication equipment, such as telephonic switching apparatus ($1.5 billion) and transmission equipment ($1.8 billion). These exports now total less than $100 million.

The largest export commodities in 2010 include:

- Radio navigational aid apparatus - $67 million in 2010
- Instruments and apparatus for physical or chemical analysis (e.g. gas or smoke analysis apparatus) - $102 million
- Surveying, meteorological or geophysical instruments - $56 million
- Instruments and apparatus for measuring or checking the flow, level, pressure or other variables of liquids or gases - $55 million

Transportation Equipment

After rising from $346 million in 2000 to $536 million in 2008, exports of transportation equipment (primarily aerospace equipment) declined by 13% between 2008 and 2010 to $464 million.

The main destination of Alberta fabricated metals is the US, which accounted for 55% of exports in 2010. Other markets include Switzerland (11%), South Korea and France (5% each) and Italy (3% in 2010 - major client prior to 2010).

The largest export commodity group is turbo propellers, with a value of $305 million in 2010, up from $111 million in 2000. Other large export commodities include:

- Special purpose motor vehicles - $58 million
- Motor vehicle parts - $34 million

Other Manufacturing

Some of the largest export commodities not included in the above categories are:

- Metal furniture - $63 million in 2010
- Plastic tubes, pipes and hoses, and fittings - $48 million
- Boards, panels and other bases for electric control or the distribution of electricity - $42 million
- Plastic sacks and bags - $38 million
- Plastic plates, sheets, film, foil and strip - $34 million

Alberta International Exports by Industry - NAICS Basis

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% Change 2009-2010
	($millions)											
Primary Agriculture	2,710.7	2,914.6	2,291.3	1,642.2	2,018.5	2,132.2	3,114.7	3,703.0	5,152.5	4,286.4	3,328.3	-22.4%
Crops	2,049.0	2,026.9	1,508.5	1,334.2	1,891.0	1,722.6	2,292.1	2,865.3	4,479.1	3,703.1	2,685.6	-27.5%
Livestock	661.8	887.7	782.8	308.0	127.5	409.5	822.6	837.7	673.4	583.3	642.7	10.2%
Primary Forestry, Fishing & Trapping	28.5	8.8	11.0	6.9	8.9	4.0	3.7	3.7	4.3	3.8	3.0	-19.8%
Mining & Energy	34,058.3	36,446.1	30,083.4	39,718.8	42,425.1	53,650.8	53,202.0	55,138.5	80,724.1	46,990.7	53,871.3	14.6%
Oil	14,878.9	12,627.3	12,669.5	15,945.0	17,107.1	20,714.8	26,942.3	28,178.9	47,873.4	31,132.1	38,842.0	24.8%
Gas & Natural Gas Liquids	18,483.9	23,044.9	16,936.2	23,466.0	24,897.6	32,200.1	25,488.6	26,008.1	30,168.0	14,798.8	13,667.1	-7.6%
Sulphur	255.7	137.5	147.8	189.9	256.0	437.1	390.0	466.8	1,896.6	287.2	452.0	57.4%
Coal	379.4	393.2	276.2	77.7	116.8	201.3	319.5	404.2	660.2	705.9	849.5	20.3%
Other Mining & Energy	60.3	243.2	53.6	40.3	47.5	97.5	61.6	80.5	126.0	66.7	60.6	-9.2%
Manufacturing	17,724.7	16,742.2	15,768.7	14,985.3	18,411.5	19,717.7	20,491.0	21,844.7	23,433.6	17,891.9	20,029.8	11.9%
Chemicals	3,487.2	3,772.8	3,636.4	3,984.1	5,426.6	6,607.4	7,073.0	7,178.3	8,004.2	5,362.0	6,245.5	16.5%
Food, Feed & Beverage	2,525.6	3,016.8	2,856.6	2,405.6	3,181.2	3,143.8	2,635.9	2,719.3	3,155.4	3,046.4	3,303.9	8.5%
Machinery	916.1	1,280.2	1,248.6	1,227.8	1,414.6	1,618.1	2,035.0	2,686.9	3,506.9	2,827.5	2,411.5	-14.7%
Petroleum & Coal Products	807.6	630.8	530.3	671.0	734.3	963.1	1,132.2	1,308.5	1,434.6	1,271.3	2,141.5	68.4%
Paper Products & Wood Pulp	1,878.0	1,578.2	1,497.8	1,380.7	1,442.1	1,388.0	1,415.4	1,351.3	1,579.9	1,289.1	1,563.3	21.3%
Primary Metal Products	437.2	458.9	613.1	669.3	996.3	1,088.3	1,513.5	2,310.1	1,824.0	1,091.3	1,373.3	25.8%
Wood Products	1,318.6	1,307.6	1,322.0	1,404.9	1,999.7	1,680.3	1,244.0	886.3	615.0	556.6	707.3	27.3%
Fabricated Metal Products	322.7	345.2	339.7	368.6	432.4	489.9	598.3	794.6	792.1	637.9	577.2	-9.5%
Computer & Electronic Products	4,523.8	2,606.0	2,084.2	1,439.4	1,313.9	1,163.7	1,320.6	1,086.7	914.2	555.2	548.9	-1.1%
Transportation Equipment	346.3	596.8	612.7	402.6	392.1	515.3	514.5	507.2	536.3	490.6	464.3	-5.4%
Electrical Equipment, App. & Comp.	184.6	245.0	179.7	208.8	284.4	255.5	235.5	292.5	295.7	217.1	223.4	2.9%
Plastics & Rubber Products	245.6	243.0	257.5	235.1	226.6	239.0	212.2	234.5	274.0	183.8	189.7	3.2%
Furniture & Related Products	410.0	349.9	317.3	274.2	259.3	225.5	214.8	200.6	185.1	116.6	97.6	-16.3%
Non Metallic Mineral Products	163.8	148.5	141.9	159.8	159.4	166.4	140.3	101.7	103.1	100.9	82.7	-18.1%
Other Manufacturing	157.7	162.5	131.2	153.2	148.4	173.6	205.7	186.2	213.1	146.7	99.7	-32.0%
Other Exports	818.6	785.5	777.2	759.4	823.0	773.6	930.4	851.0	931.9	754.7	596.3	-21.0%
TOTAL GOODS EXPORTS	55,340.3	56,897.2	48,931.6	57,112.5	63,687.6	76,279.1	77,743.8	81,550.8	110,246.2	69,929.3	77,830.4	11.3%